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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,969	09/20/2001	Yoshitsugu Hama	2001_1299A	1913

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EXAMINER

MENON, KRISHNAN S

ART UNIT	PAPER NUMBER
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1723

8

DATE MAILED: 05/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

mk-2

Office Action Summary

Application No. 09/955,969		Applicant(s) HAMA ET AL.	
Examiner Krishnan S Menon		Art Unit 1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 9-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 12-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-19 are pending.

Election/Restrictions

[The examiner inadvertently left out the follow-up written request for the election/restriction requirement in the first action, and therefore, is included herewith]

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-8, drawn to semi-permeable membrane support, classified in class 210, subclass 490.
- II. Claims 9-11, drawn to method of making the membrane support, classified in class 162, subclass 157.3.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product could be made by a melt-blown process.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr. Michael Davis, attorney for applicant, on 10/30/02 a provisional election was made with traverse to prosecute the invention of group I, claims 1-8. Affirmation of this election must be made by applicant in replying to this Office action.

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Claims 9-11 were withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-4, 6- 8, 12-15 and 17-19 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shinjou et al (US 4,795,559).

Shinjou (559) teaches a semipermeable membrane support comprising a non-woven fabric with a main fiber and a binder fiber formed of synthetic resin, manufactured by paper making process and then heating and pressing, and having tensile strength ratio between the machine and transverse direction as equal (abstract, col 5 lines 55-63) as in claim 1, and also calendered as in claim 12.

The fiber fineness is between 0.6 and 8.9 decitex (abstract, col 3 lines 37-43, examples); 1 denier = 1 gm for 9000m fiber as opposed to 1 decitex = 1g for 10,000 m.) as in instant claims 2, 13, 3 and 14; Air permeability of 0.5-7 cc/cm²/sec as in instant claim 4 and 15 (abstract). The support

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would be capable of preventing bending in the width direction during manufacture of the semipermeable membrane, since it meets the tensile strength requirements (col 5 lines 55-63) as in instant claim 6 and 17. Tensile ratio is 1:1 as in claim 7 and 18(col 5 lines 55-63). Shinjou (559) teaches a semipermeable membrane support made by heating and pressing after paper making (abstract, col 3 lines 37-43) with tensile strength ratio 1:1 (col 5 lines 55-63) having the membrane-coated front surface rougher than the rear surface as in instant claim 8 and 19.

2. Claims 1-3, 6 and 7 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Goettmann (US 5,851,355).

Goettmann (355) teaches a semipermeable membrane support comprising a non-woven fabric with a main fiber and a binder fiber formed of synthetic resin, manufactured by paper making process and then heating and pressing (abstract, col 3 lines 55-67, col 4 lines 1-19).

Goettmann (355) teaches ratio of tensile strength between paper feed direction and width direction as 1.5:1 as in instant claim 1 and 7 (Table I). The steps of papermaking and heating and pressing as in claim 1 are process. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

The fiber fineness is between 0.6 and 8.9 decitex (col 3 lines 55-67; 1 denier = 1 gm for 9000m fiber as opposed to 1 decitex = 1g for 10,000 m.) as in instant claims 2 and 3.

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The support would be capable of preventing bending in the width direction during manufacture of the semipermeable membrane, since it meets the tensile strength requirements (table 1) as in instant claim 6. [The express, implicit, and inherent disclosures of a prior art reference may be relied upon in the rejection of claims under 35 U.S.C. 102 or 103. "The inherent teaching of a prior art reference, a question of fact, arises both in the context of anticipation and obviousness." In re Napier, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed. Cir. 1995) (affirmed a 35 U.S.C. 103 rejection based in part on inherent disclosure in one of the references)].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 5 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinjou (559).

Shinjou (559) teaches a semipermeable membrane support with two different fibers and manufactured by the paper making process and heat-pressed. Shinjou (559) teaches all parameters of the non-woven such as material, fiber decitex, tensile strengths, and air permeability (abstract, col 5 lines 55-63, tables) as taught by the instant application, except the porosity of the membrane as being between 5 and 15 microns. It would be obvious to one of ordinary skill in the art at the time of invention that since the non-woven as taught by Shinjou (559) has materials and properties similar to what is disclosed by the instant application, and is made by similar methods, the pore size also would be similar.

Response to Arguments

Applicant's arguments filed on 4/7/03 have been fully considered but they are not persuasive.

Re the exhibits and the "curling test" applicant submitted in support of the 2:1 to 1:1 tensile ratio requirement: This is moot because the reference Shinjou teaches 1:1 ratio for tensile strength. Moreover, in this experiment, the applicant has not addressed other factors that contribute towards curling of the web during membrane coating, such as permeability of the web, degree of penetration of the coating solution into the web, web thickness and stiffness, etc. The experiment is also not independently verified.

Argument re calendered vs uncalendered web in the ref Goettmann: Claim 1 is product by process. Goettmann ref teaches a web (product) that has the tensile strength ratio and the material as recited in claim 1. Since claim 1 does not recite 'calendaring' as part of the structure and does not show the need for 'calendaring process' to provide additional properties to the membrane support other than the tensile ratio, the rejection is proper. Rejection of claim 4 on Goettmann ref is withdrawn, since Goettmann needs calendaring to meet claim 4 (permeability).

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Argument re Shinjou ref: Table 1 of Shinjou teaches tensile strength, without specifying direction. The examiner believes that the tensile strength in Shinjou is the same in both machine and transverse direction (ratio is 1), since this reference teaches so in col 5 lines 55-63.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S Menon whose telephone number is 703-305-5999. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L Walker can be reached on 703-308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Krishnan Menon
Patent Examiner
May 13, 2003

W. L. Walker
W. L. WALKER
SUPERVISORY PATENT EXAMINER
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